

**SEMESTER I**  
**LSM3266 Avian Biology and Evolution**

**Prerequisite:** LSM1103 Biodiversity

**Workload:** 26 lecture hours + 24 lab hours

Birds are widely studied and constitute a model for many scientific disciplines from genetics to ecology. This module explores bird biology from an evolutionary perspective. Topics include (amongst others): (1) birds' dinosaur origins; (2) present-day diversity with emphasis on Asian bird families; (3) evolutionary processes that may have led to avian flight, small genome size and other avian traits; and (4) challenges birds face in Earth's modern extinction crisis. This module is suitable for students passionate about biological processes ranging from organismic evolution at the molecular level to broad ecological and biogeographic contexts.

S/N	Topics	Lecture/Practical hours
1	Basic concepts in ornithology	2
2	Birds' dinosaurian origins, early birds	2
3	Bird anatomy – bird dissection and preparation – students will be required to dissect and prepare birds (Practical)	4
4	Avian phylogenetics and classification	2
5	Individual treatises of bird families	8
6	DNA in avian phylogenetics (Practical)	4
7	Singaporean common birds (Practical)	4
8	Bird behavior	2
9	Bukit Timah and Sungei Buloh excursions (Practical)	8
10	Bird ecology	2
11	Avian diversification mechanisms	2
12	Species concepts and species delimitation in birds	2
13	New avian species discoveries, splits and lumps	2
14	Mist-netting (Practical)	4
15	Bird extinctions, endangered species and the future of birds on this planet	2
<b>Total lectures :</b>		<b>26 h</b>
<b>Practicals:</b>		<b>24 h</b>
<b>Total hours:</b>		<b>50 h</b>

**TEXT BOOK** (Reference books): Ornithology (by Frank Gill) – however, we will be working from the primary literature as much as possible and textbook reference will be minimal

**PRACTICALS:** We will have 6 practical sessions that will be either field-based or laboratory-based. Practicals will involve tasks to be completed mostly as written reports or as activities concluded in the lab. Each practical will count for 6% of the final grade, with a total of 36% of the final grade based on practicals.

For field practicals, students are encouraged to bring their own pair of binoculars and field guide. We have a limited number of these items that can be lent out, but students will benefit greatly from having their own. For field guides, we recommend either of these two:

- (1) Birds of the Indonesian Archipelago (Eaton et al.), Lynx Edicions, Barcelona.
- (2) Birds of Southeast Asia (Robson), Helm, Publishing House, London

**MODE OF ASSESSMENT:** Practicals (see above); 36%; final closed-book examination: 64%

**MODULE CO-ORDINATOR and LECTURER:**

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